

Recent developments of high-accuracy tests of QED in Medium- Z hydrogenic and helium-like systems - a complementary probe of new science

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Recent results on hydrogenic [1-3] and helium-like medium- Z systems [4,5] are found to be complementary to tests on hydrogen [6] and muonic hydrogen [7] and indeed are sensitive enough to discover unexpected new physics. In particular, QED theoretical uncertainties are comparable to experimental accuracy.

Recent results at Electron Beam Ion Traps have reduced uncertainty to the 10 ppm region, with calibration standards defined to well below this. In particular, this yields surprisingly unexpected results and demonstrates that test of quantum electrodynamics, QED, in complementary regimes is crucial to our development of understanding just as recently the investigations of hydrogen and muonic hydrogen have been juxtaposed to world-wide interest.

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